

Self-confidence and satisfaction of nursing students in preoperative telesimulation: cross-sectional study

Autoconfiança e satisfação de estudantes de Enfermagem na telessimulação pré-operatória: estudo transversal

Autoconfianza y satisfacción de estudiantes de enfermería en la telessimulación preoperatoria: estudio transversal

Keyla Cristiane do Nascimento^{1*} , Ana Graziela Alvarez¹ , Neide da Silva Knihis¹ , Luciara Fabiane Sebold¹ , Juliana Balbinot Reis Girondi¹ , Lúcia Nazareth Amante¹ , Larissa Fernanda de Oliveira¹ 

ABSTRACT: Objective: To assess the self-confidence and satisfaction of Nursing students based on a preoperative telesimulation scenario. **Method:** Exploratory-descriptive quantitative study conducted from June 2021 to June 2022 at a public university in southern Brazil. The study included 28 undergraduate Nursing students who participated in a telesimulation on preoperative nursing. After the telesimulation, the Student Satisfaction and Self-confidence in Learning Scale and the Scale of Satisfaction with Simulated Clinical Experiences were applied through an electronic questionnaire. Descriptive statistics were used for data analysis. **Results:** Participants reported higher satisfaction (mean 4.36) than self-confidence (mean 3.83). Satisfaction with simulated clinical experiences showed that the cognitive dimension had the highest mean (9.25), followed by the realism dimension (8.83) and practical activity (8.64). **Conclusion:** Preoperative telesimulation is capable of promoting satisfaction and self-confidence in the Nursing students' learning. .

Keywords: Education, nursing. Simulation training. Perioperative nursing. Patient simulation. Remote consultation.

RESUMO: Objetivo: Avaliar a autoconfiança e a satisfação dos estudantes de Enfermagem a partir de um cenário de telessimulação pré-operatória. **Método:** Estudo quantitativo exploratório-descritivo realizado de junho de 2021 a junho de 2022 em uma universidade pública do Sul do Brasil. Participaram do estudo 28 estudantes do curso de graduação em Enfermagem, por meio de telessimulação sobre enfermagem pré-operatória. Após a telessimulação, aplicou-se a Escala de Satisfação dos Estudantes e Autoconfiança na Aprendizagem e Escala de Satisfação com as Experiências Clínicas Simuladas, por meio de questionário eletrônico. Utilizou-se estatística descritiva para análise de dados. **Resultados:** Os participantes apresentaram-se mais satisfeitos (média 4,36) do que autoconfiantes (média 3,83). A satisfação com as experiências clínicas simuladas demonstra que a dimensão cognitiva apresentou maior média (9,25), seguida da dimensão realismo (8,83) e atividade prática (8,64). **Conclusão:** A telessimulação em cenário pré-operatório é capaz de promover satisfação e autoconfiança na aprendizagem dos estudantes de Enfermagem.

Palavras-chave: Educação em enfermagem. Treinamento por simulação. Enfermagem perioperatória. Simulação de paciente. Teleconsulta.

RESUMEN: Objetivo: Evaluar la autoconfianza y satisfacción de los estudiantes de Enfermería basándose en un escenario de telessimulación preoperatoria. **Método:** Estudio cuantitativo exploratorio-descriptivo realizado de junio de 2021 a junio de 2022 en una universidad pública del sur de Brasil. El estudio incluyó a 28 estudiantes de pregrado en Enfermería que participaron en una telessimulación sobre enfermería preoperatoria. Después de la telessimulación,

¹Universidade Federal de Santa Catarina – Florianópolis (SC), Brazil.

Corresponding author: keyla.n@ufsc.br

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se aplicaron la Escala de Satisfacción y Autoconfianza del Estudiante en el Aprendizaje y la Escala de Satisfacción con Experiencias Clínicas Simuladas a través de un cuestionario electrónico. Se utilizó estadística descriptiva para el análisis de datos. **Resultados:** Los participantes reportaron una mayor satisfacción (media de 4,36) que autoconfianza (media de 3,83). La satisfacción con las experiencias clínicas simuladas mostró que la dimensión cognitiva tuvo la media más alta (9,25), seguida de la dimensión de realismo (8,83) y actividad práctica (8,64). **Conclusión:** La telesimulación preoperatoria es capaz de promover la satisfacción y autoconfianza en el aprendizaje de los estudiantes de Enfermería.

Palabras clave: Educación en enfermería. Entrenamiento simulado. Enfermería perioperatoria. Simulación de paciente. Consulta remota.

INTRODUCTION

The COVID-19 pandemic, declared by the World Health Organization (WHO) in March 2020, prompted various transformations in the educational landscape, including the transition to remote teaching in response to social distancing measures^{1,2}.

Following the directive of the Ministry of Education, as per Ordinance No. 343 issued on March 17th, 2020, both public and private educational institutions nationwide shifted from in-person classes to remote teaching². This transition facilitated the delivery of synchronous and asynchronous learning activities to students, enabling the continued monitoring of curriculum content and the implementation of assessment measures throughout the pandemic period.

Amidst the numerous adjustments necessitated by the evolving educational landscape and the integration of new teaching technologies, there was a notable surge in the utilization of clinical simulation, notably telesimulation, as a viable substitute for hands-on instruction within secure, risk-free environments³.

When perceived as legitimate, authentic, and realistic, clinical simulations have the potential to foster substantial learning outcomes among aspiring professionals by facilitating the seamless integration of theoretical knowledge with practical application⁴.

Telesimulation is defined as a simulation technique that leverages simultaneous telecommunication and simulation processes. It serves as a means to educate, train, and evaluate students remotely, eliminating the need for physical co-location of participants in the same setting^{5,6}.

In nursing, there is a growing adoption of technologies that enable more active and student-centered teaching methodologies, particularly in areas such as clinical case studies, laboratory exercises, and simulations⁷. These technologies are implemented with pedagogical objectives, either due to

their distinct teaching attributes or the advantages they offer to student training. However, it is advisable to accompany the integration of new teaching methodologies with ongoing evaluations to facilitate adjustments and adaptations. Such assessments aim to gauge students' satisfaction levels and self-confidence, recognizing these as crucial elements in the teaching and learning process⁸.

While instruments gauging students' self-confidence and satisfaction in simulations may not directly correlate with learning outcomes, they offer valuable insights for refining and enhancing this instructional approach^{4,8}. Moreover, motivated students stand to gain both quantitatively and qualitatively in terms of knowledge acquisition when they recognize the applicability of their learning to real-world practice settings⁹. Consequently, assessing these factors can serve as an indicator for the utilization and evaluation of teaching strategies¹⁰.

Presently, numerous instruments are available for assessing simulations, including the Student Satisfaction and Self-Confidence in Learning Scale (SSCLS)¹⁰ and the Satisfaction with Simulated Clinical Experiences Scale (SSES)⁹, both of which have been adapted and validated for use in the Brazilian context.

The anticipated outcomes of student satisfaction and self-confidence, when coupled with heightened engagement and motivation for learning, typically correlate with improved performance levels during simulations⁹.

This study aimed to enhance the evaluation of telesimulation through the students' viewpoint, while also providing insights for educators regarding pertinent factors to consider in the planning of such activities.

OBJECTIVE

The objective of this study was to assess the self-confidence and satisfaction levels of nursing students through a preoperative telesimulation scenario.

METHOD

This cross-sectional quantitative study was conducted from June 2021 to June 2022 at a public university in Santa Catarina, Brazil. The manuscript was prepared following the STROBE guidelines.

The research involved fifth-semester undergraduate Nursing students who were invited to participate voluntarily, with an emphasis on ensuring no losses in the assessment of the pedagogical strategy. The discipline focusing on the surgical conditions of patients served as the context for the telesimulation, with instructors adapting the previously utilized face-to-face simulation method for clinical telesimulation.

The sample, chosen through non-probabilistic convenience sampling, comprised students enrolled in the course module covering surgical patient conditions, aged 18 and above, and who took part in the remote telesimulation session. Exclusion criteria encompassed duplicate or incomplete questionnaires (those with fewer than 50% of responses).

The theoretical-practical telesimulation activity in preoperative Nursing occurred on three occasions, one per semester, utilizing remote connection (by Google Meet[®] videoconference). These sessions involved synchronous interactions among students, teachers, and standardized patients, and were meticulously structured in accordance with the theoretical model of the National League for Nursing – Jeffries Simulation Framework. The approach was grounded in simulation-based education with simulated patients¹¹.

Students were paired up and provided with a schedule and access link to the virtual room where the telesimulation scenario titled “Preoperative Nursing Teleconsultation in Gastrostomy” unfolded. This scenario involved a standardized patient and two instructors from the discipline. The activity followed a structured format, beginning with briefing stages (5 minutes), followed by a simulation with the standardized patient (15 minutes), and debriefing (30 minutes). The scenario remained consistent for all participating students.

At the appointed time, student pairs entered the virtual room and were briefed on the simulation objectives, initial situation (patient’s clinical history), and allotted time for the activity. During the telesimulation, instructors disabled their cameras and audio, facilitating unrestricted interaction between students and standardized patients. The scenario encompassed patient assessment via anamnesis, provision of general and specific nursing care instructions pertinent to the preoperative gastrostomy phase, and addressing the

patient’s inquiries comprehensively. Subsequently, the debriefing phase ensued, with teachers following the predetermined sequence proposed for this activity.

An electronic questionnaire (using Google Forms[®]) was employed, featuring instructions pertaining to data collection, authorization for participation by voluntary and informed consent, and two evaluation instruments specific to telesimulation.

The initial instrument, SSCLS¹⁰, evaluated students’ satisfaction and self-confidence during telesimulation. It comprised 13 items, with five focusing on satisfaction (questions 1 to 5) and eight on self-confidence in learning (questions 6 to 13).

Each item offered five response options:

- 1 – “Fully disagree;”
- 2 – “Disagree;”
- 3 – “Neither agree nor disagree;”
- 4 – “Agree;” and
- 5 – “Fully agree.”

The second instrument, SSES⁹, evaluated student satisfaction with the simulation across three dimensions: practical, realism, and cognitive. Consisting of 17 items, students rated their opinions on a scale from 1 to 10, with higher scores indicating greater satisfaction. The scale items were grouped into three factors: practical dimension, assessing the students’ overall satisfaction with the practices and dynamism of the class (items 1, 2, 3, 4, 5, 6, 7, 8, and 12); realism dimension, which evaluated the fidelity, legitimacy, and authenticity of the simulation (items 13, 14, 15, 16, and 17); and cognitive dimension, reflected on post-simulation considerations and the ability to integrate theory with practice (items 9, 10, and 11)⁹.

The results underwent analysis utilizing descriptive statistics (mean, median, standard deviation) and agreement index, presented in tables. For the SSCLS instrument, assessments included the averages of individual items and the overall average, with positive responses defined as scores equal to or greater than 3. Regarding the SSES, scores exceeding 5 were deemed indicative of positive results.

The normality of quantitative variables was assessed using the Shapiro-Wilk test, and correlations between scales were examined utilizing Spearman’s correlation coefficient. Significance was determined by p-values < 0.05 and a 95% confidence interval (95% CI). The analyses were conducted using the statistical software SPSS v20.

This study is a component of the larger research project titled “Nursing Care in the Perioperative Period: Perspectives

on Teaching, Assistance, Safety, and Management,” which received approval opinion 3.701.031 from the Research Ethics Committee of Universidade Federal de Santa Catarina (UFSC), by Brazil platform.

RESULTS

Out of the 58 eligible undergraduate Nursing students, 28 took part in the study. Their ages ranged from 19 to 23 years old, with the majority being female (82.1%).

The evaluation of Student Satisfaction and Self-Confidence in Learning indicated an average satisfaction score of 4.36 (standard deviation – SD=0.18) and an average self-confidence score of 3.83 (SD=0.14). Further details regarding each dimension are provided in Table 1.

Within the satisfaction dimension, the majority of students (20; 71.4%) expressed complete agreement with the teaching methodology employed by instructors during

telesimulation, marking it as the item with the highest average score. Sixteen students (57.1%) found the professors’ approach suitable. However, four students (14.3%) disagreed with the assertion that the teaching materials (remote platform, standardized patients, and clinical case) were motivating and conducive to learning, while six students (21.4%) neither agreed nor disagreed with this statement.

In the trust dimension, the items with the highest evaluations were those concerning the utilization of resources for teaching through telesimulation (24; 85.7%) and self-responsibility in learning (21; 75.0%). Conversely, the item that garnered the most disagreement (6; 21.4%) pertained to students’ confidence in mastering the content covered in the simulated activity, marking it as the item with the lowest average score.

The results of the items assessing satisfaction with simulated clinical experiences are depicted in Table 2. The cognitive dimension garnered the highest average satisfaction, followed by the realism and practical activity

Table 1. Analysis of Student Satisfaction and Self-confidence in Preoperative Nursing Telesimulation¹⁰. Florianópolis (SC), Brazil, 2022.

Items of the scale	Mean	SD	Median(min.–max.)
Satisfaction dimension			
1. The teaching methods used in this telesimulation were helpful and effective.	4.36	0.73	4 (2–5)
2. Telesimulation provided me with a variety of instructional materials and activities to enhance my learning of the surgical medical curriculum.	4.11	0.83	4 (2–5)
3. I enjoyed the way my teachers taught through telesimulation.	4.68	0.55	5 (3–5)
4. The instructional materials (remote platform, standardized patients, clinical case) used in this telesimulation were motivating and helped me learn.	3.79	1.03	4 (2–5)
5. The way my teachers taught through telesimulation was suitable for how I learn.	4.39	0.88	5 (2–5)
Self-confidence dimension			
6. I am confident that I master the content of the telesimulation activity presented by the teachers.	3.46	1.07	4 (1–5)
7. I am confident that the telesimulation included the necessary content for mastering the surgical medical curriculum.	3.64	1.13	4 (2–5)
8. I am confident that I am developing skills and gaining the necessary knowledge from this telesimulation to perform the required procedures in a surgical environment.	3.71	0.98	4 (2–5)
9. My teachers used useful resources to teach telesimulation.	4.21	0.69	4 (3–5)
10. It is my responsibility as a student to learn what I need to know through telesimulation activity.	3.96	1.04	4 (1–5)
11. I know how to seek help when I do not understand the concepts covered in telesimulation (self-responsibility).	3.93	0.86	4 (2–5)
12. I know how to use telesimulation activities to learn skills.	3.82	0.86	4 (2–5)
13. It is the teacher’s responsibility to tell me what I need to learn about the theme developed in the telesimulation during class.	3.93	0.86	4 (2–5)
Overall mean	4.00		

SD: standard deviation; min.: minimum max.: maximum.

dimensions. In the cognitive dimension, post-scenario discussions (debriefing) received the highest score (22; 78.6%). In the practical activity and realism dimensions, interaction with colleagues (8; 64.3%) and the quality of the simulators (18; 64.3%) were rated most favorably. The items with the lowest satisfaction pertained to motivation during telesimulation participation and the quality of materials used (clinical case and script), both receiving scores below 5 (5; 17.9%).

The Shapiro-Wilk normality test demonstrates that the data differs statistically from a normal distribution (Table 3).

Lastly, the existence of an association between the dimensions of SSCLS and SSES was examined using the Spearman correlation method (Table 4).

Table 4 illustrates a positive association between the dimensions of satisfaction and self-confidence, suggesting that students who exhibit higher levels of self-confidence tend to report greater satisfaction with preoperative telesimulation.

Table 2. Analysis of satisfaction with simulated clinical experiences using preoperative telesimulation⁹. Florianópolis (SC), Brazil, 2022.

Dimension and items of the scale	Mean	SD	Median(min.-max.)
Dimension of practical activity	8.64	0.32	
1. Overall satisfaction with the classes.	8.39	1.37	8 (6–10)
2. Satisfaction with acquired learning.	8.50	1.37	9 (5–10)
3. Motivation when participating in telesimulation.	8.14	2.22	9 (2–10)
4. Dynamism of telesimulation.	9.04	1.17	9 (6–10)
5. Active participation in the developed scenario.	8.61	1.50	9 (5–10)
6. Interaction with peers.	9.14	1.53	10 (5–10)
7. Interaction with teachers.	9.11	1.69	10 (2–10)
8. Satisfaction with the level of difficulty of the scenario.	8.04	1.91	9 (5–10)
12. Satisfaction with the level of difficulty of the scenario.	8.79	1.40	9 (6–10)
Cognitive dimension	9.25	0.06	
9. Satisfaction with post-scenario discussion (debriefing).	9.54	1.10	10 (5–10)
10. Connection of scenarios to theory.	9.11	1.10	10 (7–10)
11. Adequacy to the theme developed in the TP classes.	9.11	0.99	9 (7–10)
Realism dimension	8.83	0.52	
13. Realism of the developed scenarios.	8.96	1.10	9 (7–10)
14. Credibility during the scenario.	8.75	1.32	9 (6–10)
15. Quality of the material used (clinical case, script).	7.82	2.25	9 (2–10)
16. Quality of the equipment used (virtual room).	9.21	1.07	10 (7–10)
17. Quality of the simulators (standardized patients).	9.39	0.99	10 (7–10)
Overall mean	8.80		

SD: standard deviation; min.: minimum; max.: maximum.

Table 3. Results of the Shapiro-Wilk normality test. Florianópolis (SC), Brazil, 2022.

Dimension	SSCLS		SSES		
	Satisfaction	Self-confidence	Practical activ.	Cognitive	Realism
Mean	4.36	3.83	8.64	9.25	8.83
Median	4	4	9	10	9
Shapiro-Wilk W	0.758	0.806	0.822	0.729	0.854
Shapiro-Wilk p-value	<0.001	<0.001	<0.001	<0.001	0.001

SSCLS: Student Satisfaction and Self-Confidence in Learning Scale;

SSES: Satisfaction with Simulated Clinical Experiences Scale.

Table 4. Correlation test between the Scale of Student Satisfaction and Self-confidence in Learning and the Scale of Satisfaction with Simulated Clinical Experiences. Florianópolis (SC), Brazil, 2022.

Dimension		Satisfaction	Self-confidence
Confidence	Spearman's rho	0.661	—
	p-value	<0.001	—
Practical activity	Spearman's rho	0.847	0.723
	p-value	<0.001	<0.001
Cognitive	Spearman's rho	0.430	0.441
	p-value	0.022	0.019
Realism	Spearman's rho	0.466	0.374
	p-value	0.012	0.050

Additionally, all dimensions of the SSES scale demonstrate positive correlations with satisfaction and self-confidence, indicating that higher levels of satisfaction and self-confidence are associated with a more favorable assessment of Simulated Clinical Experiences by participants.

DISCUSSION

Students exhibited elevated levels of satisfaction and self-confidence throughout their preoperative telesimulation experiences. In the satisfaction dimension, the majority of students provided positive evaluations of telesimulation quality, emphasizing aspects such as the relevance and realism of simulated scenarios. Concerning the trust dimension, the most positively rated items included the utilization of resources for teaching and the encouragement of self-responsibility in learning.

These findings underscore the significance of telesimulation as an innovative tool, particularly within contexts where students and instructors are geographically dispersed¹².

A consensus of experts conducted in 2020 highlights the evolving nature of telesimulation, positioning it as an interactive and challenging methodology within the pandemic context. While telesimulation had been previously described in the literature, there remains a paucity of research demonstrating its full range of utility and effectiveness^{3,5}, particularly in the realm of teleconsultation education for Nursing. Nevertheless, despite this research gap, evidence suggests the effectiveness of teleconsultation in nurses' daily practice, especially amid the COVID-19 pandemic¹²⁻¹⁴. Therefore, there arises a necessity to equip future professionals with teleconsultation

skills, which can be facilitated through telesimulation, enabling students to engage with an environment closely resembling Nursing teleconsultation.

Hence, it becomes imperative to assess the satisfaction associated with this educational practice to facilitate adjustments and enhancements. In this study, the analysis utilizing the SSCLS instrument indicated that students displayed higher levels of satisfaction compared to self-confidence, aligning with findings from both international studies employing the same scale^{15,16}, as well as a Brazilian study conducted at a university in the interior of Minas Gerais⁸, which involved 45 Nursing students participating in simulated workshops focusing on semiology and sociotechnics, students similarly demonstrated greater satisfaction than self-confidence.

Indeed, direct comparisons of results can be challenging due to variations in intervention content, activity duration, and inclusion criteria across different studies. Additionally, none of these studies specifically investigated nursing students' confidence and satisfaction with telesimulation.

While scenario-based simulation is typically linked to satisfaction and self-confidence¹⁷, the implementation of telesimulation necessitates additional considerations. Factors such as internet connectivity, institutional firewalls, and the availability of video/audio resources and interfaces can significantly influence student engagement. Hence, these factors might contribute to lower scores on items within the SSES scale, such as motivation during telesimulation participation, as well as on the SSCLS scale, particularly in relation to the perceived motivation and effectiveness of the teaching materials (remote platform, standardized patients, and clinical case) utilized in telesimulation.

When assessing the confidence dimension within the SSCLS instrument, the majority of students concurred that they bear the responsibility for identifying, based on the concepts covered in telesimulation, the knowledge they need to acquire to enhance their understanding. Participation of nursing students in telesimulation facilitates a boost in self-confidence concerning cognitive and behavioral skills¹², which are integral to perioperative nursing care. Moreover, self-confidence plays a pivotal role in fostering autonomy and leadership in nursing, directly impacting one's ability to provide assistance and fostering motivation, thereby enhancing academic and professional performance¹⁸.

In terms of student satisfaction with learning, the item that received the highest score pertained to the teaching methodology employed by instructors during telesimulation, with students considering it completely adequate.

Likewise, these satisfaction-related items also achieved the highest averages in a study conducted in Brazil that utilized the same evaluation scale⁸.

Concerning satisfaction with simulated clinical experiences during preoperative telesimulation, the average scores for all criteria exceeded 7, with an overall average of 8.80. These consistently positive scores signify that the telesimulation activity in the preoperative nursing consultation facilitated effective interaction with the simulated patient, imbued realism into the scenario, and conveyed credibility and productivity, in addition to other positively scored dimensions. Elements such as the dynamism of telesimulation, interaction with colleagues and instructors, and satisfaction with debriefing received scores above 9, underscoring the efficacy of this educational endeavor.

A study conducted by a public university in the Central West region of Brazil, employing telesimulation, revealed that nursing students regarded the activity as crucial for their training and maturation process. They particularly emphasized the realism of the scenarios, which closely resembled actual care situations addressed in the telesimulation, as well as the effectiveness of the nurse's conduct in providing care¹⁹.

Indeed, telesimulation represents a subset of clinical simulation, distinguished by its facilitation of remote educational practices in health teaching, conducted synchronously via video calls. Its primary aim is to enhance knowledge acquisition, boost confidence and satisfaction in learning, foster interprofessional interaction, and cultivate the development and refinement of skills and competencies pertinent to health professions²⁰.

However, telesimulation does present limitations in the training of technical and practical skills^{5,12}. Participants may have fewer opportunities to engage in tactile practical activities, although they can observe technical skills being demonstrated^{12,14}. Consequently, the learning outcomes of telesimulation should prioritize cognitive skills (understanding the rationale behind certain actions) and behavioral decision-making skills (how participants would communicate with their team, patients, and patients' families), rather than technical skills^{5,12}. In the present study, telesimulation was employed in the context of preoperative gastrostomy nursing to facilitate learning related to the ability to provide guidance on general and specific nursing care. Variations of this scenario could include guidance for the postoperative period, hospital discharge of surgical patients, as well as guidance related to other surgical specialties.

It is crucial to acknowledge that surgical patients necessitate complex and evidence-based care to ensure their safety and well-being. Equipping students with the skills to systematize, implement, and evaluate this care is a significant responsibility that demands commitment, creativity, and the adoption of interactive teaching methodologies by educators. These methodologies aim to stimulate student participation, foster the development of clinical reasoning and empathy, and facilitate the teaching-learning process^{3,5}.

In the meantime, telesimulation can be an effective strategy. This practice has been used for a long time in Medicine, however, in Nursing, studies on the use of simulation for teaching are still incipient, although expanding^{3,12}. The use and effectiveness of telesimulation in health education demonstrated that this approach is gaining acceptance as a form of distance simulation education¹². However, a recent integrative review on telesimulation in the health sector, focusing on Nursing, revealed the absence of Brazilian studies on the topic³.

Finally, there was low student adherence to the proposal to evaluate the experience, which hindered a more detailed investigation into satisfaction with the telesimulation methodology in remote teaching and self-confidence in conducting preoperative guidance. It is conceivable that this low adherence may be attributed to some level of dissatisfaction among students arising from the restrictions imposed by the pandemic, which prevented them from engaging in simulated practices in person. Additionally, it is possible that despite the explanation of the purpose of this evaluation, students may not have fully grasped the value of this experience for learning related to nursing care guidance in the preoperative period, even when conducted remotely. This resistance to participating in the proposed preoperative telesimulation activities may be partly attributed to a greater affinity and sense of security associated with traditional learning styles.

Limitations

The absence of a control group in this study poses challenges in determining whether the students' elevated levels of satisfaction and self-confidence were directly attributable to preoperative telesimulation or simply to their novel experience with telesimulation. Additionally, conducting research within the educational institution itself may introduce issues of power imbalance between researchers and students, potentially altering the way students respond to questionnaires.

Contributions to the field of Nursing

By employing telesimulation as an educational approach, which integrates technological tools with simulated patient scenarios, the efficacy of this methodology in imparting knowledge about preoperative guidelines becomes evident, particularly within a context shaped by the constraints imposed by the COVID-19 pandemic. This study offers valuable insights for the adoption of more effective teaching strategies, thereby enhancing patient safety and better preparing future nursing professionals to navigate the challenges of perioperative clinical practice.

CONCLUSION

In conclusion, telesimulation within the preoperative scenario fostered satisfaction and self-confidence in the learning process of nursing students. Students expressed satisfaction with the utilization of this teaching-learning strategy, particularly highlighting the effectiveness of the teaching approach. Additionally, they reported feeling self-assured in their learning, emphasizing the value of resources in telesimulation and their own responsibility for the learning process.

During the assessment of simulated clinical experiences, the cognitive dimension exhibited the highest levels of satisfaction, with particular emphasis on debriefing. In the

practical activity dimension, interaction with colleagues during telesimulation garnered the highest satisfaction ratings. Meanwhile, in the realism dimension, the quality of the simulators (simulated patients) emerged as the primary driver of satisfaction.

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CONFLICT OF INTERESTS

The authors declare there is no conflict of interests.

AUTHORS' CONTRIBUTION

KCN: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. AGA: Conceptualization, Data curation, Writing – review & editing, Supervision. NSK: Conceptualization, Writing – original draft, Validation. LFS: Formal analysis, Data curation, Writing – review & editing. JBRG: Formal analysis, Data curation, Writing – review & editing. LNA: Formal analysis, Writing – review & editing. LFO: Investigation, Writing – original draft.

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